Claims

We claim:

1. A net-aware telephone switch providing IP phone service for a user of a communication terminal, the net-aware telephone switch comprising:

a two-line switch connecting with the communication terminal for switching outgoing calls between IP phone mode and PSTN phone mode;

a CPU for sending and receiving IP phone mode calls to and from the net-aware telephone switch;

storage for storing programs and data required for sending and receiving the IP phone mode calls;

an Internet connector for connecting the net-aware telephone switch with the Internet; and

a bus for connecting together the two-line switch, the CPU, the storage, and the Internet connector.

2. The net-aware telephone switch of claim 1, further comprising an A/D converter with an analog side connected

with the two-line switch and a digital side connected with the bus, for converting telephone signals between analog form suited for the communication terminal and digital form suited for the net-aware telephone switch.

3. The net-aware telephone switch of claim 1, wherein the Internet connector includes an Ethernet card.

4. The net-aware telephone switch of claim 1, wherein the Internet connector includes a broadband modem.

5. The net-aware telephone switch of claim 1, wherein the Internet connector includes a DSL modem.

6. The net-aware telephone switch of claim 1, wherein the Internet connector includes a wireless modem.

7. The net-aware telephone switch of claim 1, further comprising a display for prompting the user for information.

8. The net-aware telephone switch of claim 1, further

comprising a wireless port connected with the bus for receiving data input by the user through an input device.

9. The net-aware telephone switch of claim 8, wherein the wireless port includes an infrared transceiver.

10. The net-aware telephone switch of claim 8, wherein the wireless port includes a Bluetooth transceiver.

11. The net-aware telephone switch of claim 1, wherein the storage further comprises:

a parameters setting module, operated by the CPU to direct the user to set parameters for establishing a connection with an Internet service provider and a connection with an Internet telephone provider, and to direct the user to set an indicator indicating IP phone mode;

an Internet connecting module, operated by the CPU to establish the connection with the Internet service provider;

an IP phone initiating module, operated by the CPU to establish the connection with the Internet telephone

provider; and

an IP phone conversation module, operated by the CPU to enable the user to talk with a called end in IP phone mode.

12. The net-aware telephone switch of claim 11, wherein a digital certificate is stored in the storage and sent to the Internet telephone provider for authentication.

13. The net-aware telephone switch of claim 11, wherein the parameters include an address of the Internet service provider and an address of the Internet telephone provider.

14. The net-aware telephone switch of claim 13, wherein the parameters further include a first password associated with the Internet service provider and a second password associated with the Internet telephone provider.

15. The net-aware telephone switch of claim 14, further comprising a smart card reader-writer for storing the parameters into a smart card inserted into the smart card reader-writer.

16. The net-aware telephone switch of claim 15, wherein a digital certificate is stored in the smart card and sent to the Internet telephone provider for authentication.

17. A method for providing IP phone service for a user of a communication terminal, comprising the steps of:

establishing a connection with an Internet service provider and a connection with an Internet telephone provider;

receiving an outgoing call signal input by the user through the communication terminal;

determining whether the outgoing call signal includes information indicating that the outgoing call signal is an IP phone mode call;

if the outgoing call signal includes information indicating that the outgoing call signal is an IP phone mode call, providing IP phone service for the user through the Internet telephone provider; and

if the outgoing call signal does not include information indicating that the outgoing call signal is an IP phone mode call, routing the outgoing call signal to a public service

telephone network.

18. The method of claim 17, wherein the step of providing IP phone service for the user comprises the steps of:

converting an analog voice signal associated with the outgoing call signal to a digital voice signal; and

converting the digital voice signal into TCP/IP packets suitable for Internet transfer.

19. The method of claim 17, further comprising the step of reading parameters for connecting with the Internet telephone provider from a smart card.